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Police Knowledge Exchange Full Report 2018



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Produced by The Open University (2018)

Commissioned by:



**College of
Policing**



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collaborative

Reciprocal
benefit

"get the
job done"

learning

Safe
sharing

Wider social community

RISK AVERSION

BLAME

HIERARCHY

POLICE

Value
to
share

How to
effectively
share

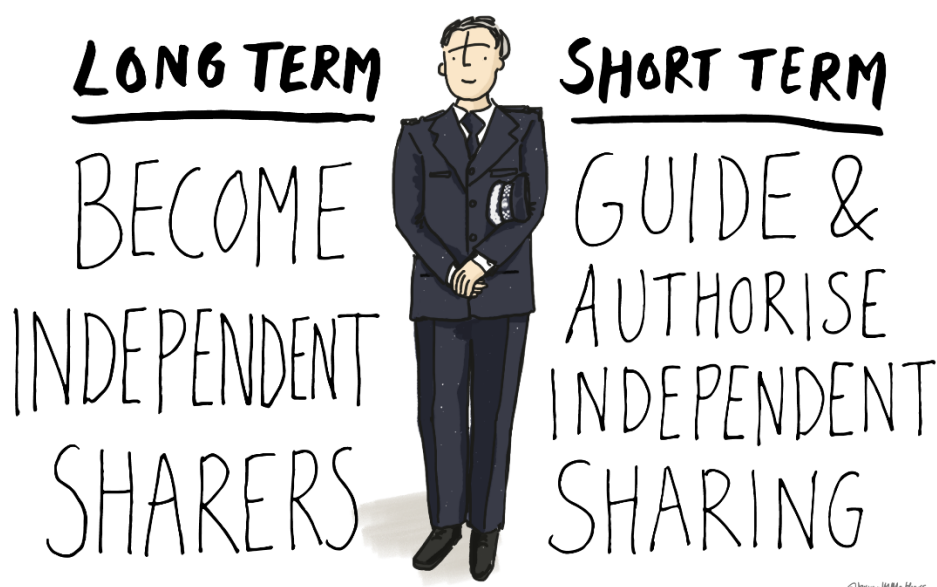
Become
independent
sharers

POLICE

Executive Summary

This report was commissioned to explore the enablers and barriers to sharing within and between police forces and between police forces and partners, including the public. This was completed from an interdisciplinary review of international literature covering sharing, knowledge exchange, learning and organisational learning. The literature broke down into four main factors; who, why, what and how. An introduction to the literature is presented with 'Who' is sharing which considers both personal identity and different institutional issues. The 'Why' literature covers issues of cultural and community motivators and barriers. The 'What' segment reviews concepts of data, information and knowledge and related legislative issues. Finally, the 'how' section spans face to face sharing approaches to technologies that produce both enablers and barriers. A series of 42 in-depth interviews and focus groups were completed and combined with 47 survey responses¹. The aim of the interviews, focus groups and survey was to show perceptions and beliefs around knowledge sharing from a small sample across policing in order to complement the findings from the literature review.

The survey was adapted from a standardised questionnaire (Biggs, 1987). The Biggs questionnaire focused on what motivated students to learn and how they approached their learning. Our adapted survey looked at what motivated police to share, and how they approached sharing. The responses showed a trend, across the police, towards a motivation for sharing to develop a deeper understanding of issues. However, the approaches and the strategies they used to share with others, which were primarily driven by achieving and surface approaches (to get promoted and get the job done). According to Biggs (1987) this could leave them discontented as they never progress to a deeper understanding of issues. Scaffolding² sharing within the police through processes that are clearly defined, effective and valued could help to overcome these issues.



¹ Data were collected from across 11 police forces located across the country .

² Scaffolding refers to the provision of structured support.

Within the interviews and focus group findings a similar structured approach to sharing was adopted. Within the 'who' section some key aspects around personal relationships, reciprocity and reputation were identified. The 'why' the police share was one of the largest discussion points. Not only was there a deep motivation to solve key policing issues there was an approach of reciprocity. Police sharing was deeply motivated to support 'good practice' in the prevention and detection of crime. However, a sharing barrier was identified in the parity of value given to different types of knowledge for example between professional judgement and research evidence knowledge. Sharing was achieved when there were reciprocal benefits, in particular with personal networks or face to face sharing which was noted as 'safe'. Again, this was inhibited by misunderstandings around the 'risks' of sharing, frequently attributed to data protection legislation; producing cautious reactions and as an avoidance tactic to save time and effort sharing. However, a divide was noted between technical users and those who avoided any online systems for sharing; often due to poorly designed systems and a lack of confidence in how to use systems. The police culture was identified as being risk-adverse, and competitive due to multiple factors, a lack of supported time to share, Her Majesty's Inspectorate of Constabulary (HMIC) reviews and promotion criteria. The result was perceived to be a poor cultural ability to learn from mistakes and a likelihood to repeat errors.

A set of strategic recommendations are given and include the use of a sharing authorised professional practice for HMIC reviews, sharing networks and training. A further set of operational recommendations are given such as; sharing impact cases for evidence based practice, data sharing officers and evaluating mechanisms for sharing.

This full report is supported by the **Police Knowledge Exchange Summary Report 2018** which gives an overview of the findings and recommendations.

Table of Contents

Executive Summary.....	5
1. Aims.....	8
2. Methodology and Methods	9
3. Literature Review.....	11
3.1. Who do we share with?	12
3.2. Why do we share?	13
3.3. What do we share?	14
3.4. How do we share?	17
4. Knowledge Sharing Findings: Barriers and Enablers.....	19
4.1. Findings: Questionnaire	19
4.2. Findings: Who?	20
4.3. Findings: Why?	21
4.4. Findings: What?	25
4.5. Findings: How?	28
5. Recommendations.....	31
6. Summary table of strategic and operational recommendations	39
7. References	40
8. Appendix A: List of Policing Systems	45
9. Appendix B: Knowledge Exchange Platforms.....	46
10. Appendix C: Online Questionnaire	47
11. Bibliography.....	52

1. Aims

This research was commissioned by the Association of Police and Crime Commissioners (APCC) the National Police Chiefs Council (NPCC) and Home Office. The aims of this research are to:

- Describe the knowledge sharing 'need' in policing; including in forces, both operational and strategic; and the offices of police and crime commissioners
- Identify facilitators and blockers to effective knowledge sharing across organisations

The research addresses cultural aspects of knowledge sharing across the police service. The Police Reform and Transformation Board (the Board) is driving the Policing Vision 2025's ambitions for cultural change by:

- Transforming the culture of leadership to enable rapid innovation across the Service;
- Establishing a methodology and framework for practitioners to build consistent standards and knowledge based on evidence; and
- Developing staff through leadership that defines a better balance between personal accountability and a bureaucratic fear of making mistakes.

This research activity identifies the cultural blockers and facilitators to effective knowledge exchange in policing. Recommendations from this study will inform the next phase of activity for the Board. This work follows from the 'Learning Leaders' project, that was presented to the National Police Chiefs Council in April 2017.



2. Methodology and Methods

This project took place in March 2018. The report should be used as an initial pilot indication of understanding. More detailed research is required to fully understand the implications of these initial indicators.

The research began with a review of core literature that was held by the College of Policing; a review of the Policing Vision 2025 and a review of the Leadership and Learning Report (Metcalf, 2017). Key themes and search terms were identified and used to help focus the review of policing research literature and grey literature. Additional themes and terms emerging from this literature were used to search the wider domain literature to identify the knowledge exchange and evidence-based practice issues, barriers and enablers. The wider domains included healthcare, industry and education (from schools to higher education). These sectors and the literature were chosen both because they aligned with policing objectives and structures or because they provided a comparative approach to contrast with the police approaches. The majority of the literature reviewed reflected a public body perspective and contained extensive research both in evidence-based practice and sharing issues. For example, healthcare parallels the police with regard to its public responsibility and the need to ensure safety critical procedures. In contrast healthcare historically has a strong research and evidence-based practice culture. Much of the industrial literature, though not being public bodies, did have safety critical requirements e.g. aeronautical industry. The educational literature showed some interesting comparisons for the police, for example academia directly competes for its students in a way that the police do not, it retains often highly sensitive personalised data, yet the literature showed key open sharing initiatives that have started in higher education. In parallel to the literature review, data were collected from police officers and staff using semi-structured interviews, focus groups and a 36 question questionnaire administered either on paper (preceding a focus group) or online.



@BryonWilliams

Several years of knowledge exchange research within the police and other domains has identified a close link between sharing, informal learning and professional development. Key to previous research have been the motivators and strategies that people take in developing their understanding. We have found in other domains that if the motivation for 'why' you do an activity doesn't align with your strategies for 'how' you do it then people can feel the process has been unsuccessful. In the learning domain, the Biggs (1987) study process questionnaire, is a standardised questionnaire that has been extensively tested with over 2500 students over several years, and is widely accepted as robust. However, as we have adapted the questions to elicit information on police motivations and attitudes to sharing.

Participants were drawn from 11 police forces across the UK. The interviews and focus groups were held with 42 respondents from a range of roles and ranks across policing, both officers and staff. Online Questionnaire responses were received from 47 officers and staff. Table 1 lists the roles and ranks of the participants. Table 2 lists the police forces from which participants were drawn in alphabetical order. These two tables indicate the spread of perspectives gathered for this research, there is no implied connection between role/rank in Table 1 and the police force in Table 2.

Table 1 – Police roles, ranks

Roles & Ranks
Police and Crime Commissioner
Chief Superintendent
Superintendent
Chief Inspector
Detective Chief Inspector
Inspector
Detective Inspector
Sergeant
Detective Sergeant
Police Constable
Staff (including support staff, HR, control room, analysts,)

Table 2 – Police forces

Police Forces
Bedfordshire Police
Cambridgeshire Constabulary
City of London Police
Derbyshire Constabulary
Dorset Police
East Midlands Police
Hertfordshire Constabulary
Lancashire Constabulary
Lincolnshire Police
Thames Valley Police
Devon and Cornwall Police

The interviews and focus groups were transcribed and thematically open coded (through an inductive analysis process) to identify themes emergent from police practice. These themes were collated into ‘why’, ‘what’, ‘how’ and ‘who’ to help unpick exactly what acts as an enabler to sharing and what acts as a barrier. This analysis was then combined, through a grounded approach, with the themes identified in the literature and fed into the findings and recommendations in this report.

3. Literature Review

This section reviews the literature to give the theoretical underpinnings surrounding the question of who the police share with, why they share, what they share and how they share.

In this report, we use a number of terms to explore concepts around sharing, what we share and how we share. These include:

Term	Explanation
Data	Raw, unprocessed data or statistics e.g. number of anti-social behaviour (ASB) incidents in a month.
Data sharing	Sharing raw data.
Data subject	The individual whose personal data is being shared.
Data/information/knowledge management	Systems and processes for managing data, information and knowledge.
Empirical	Data and information that is based on and can be verified by observation or experience.
Independent sharers	Individuals with an understanding both of what can be shared and the processes for sharing and who have the confidence and authority to make sharing decisions.
Information	Data that has had some level of processing or interpretation applied to it such as analysts' reports e.g. ASB incidents broken down by time, type and by location.
Information sharing	Sharing data that has been processed or interpreted.
Knowledge	Different pieces of information are collated and combined along with e.g. practical experience and practitioner expertise, to create knowledge that can lead to useful actions. For example information on a regular spike in alcohol-related ASB reports outside a pub with extended drinks license. Local police know that under-age drinking is an issue in that area. Combining pieces of information together produces knowledge that can lead to effective preventative actions.
Knowledge sharing	Sharing practices and practice-based insights and knowledge.
Knowledge exchange	Two-way knowledge sharing.
Scaffolding	Providing structured support.

3.1. Who do we share with?

When reviewing knowledge sharing, we need to consider who is sharing and thus the concept of identity is important as ‘who we are’ is tightly interwoven with ‘what we have learned’ from sharing (Bernstein & Solomon, 1999). Our identities change as we move between different social worlds and over time (Bowker & Star, 2000; Goffman, 1969; Lave & Wenger, 1991). This identity is extended to a sense of belonging and an organisational culture affecting with whom we share (Schein, 2004). Gider et al. (2015) identified, in healthcare, inhibited sharing of specific patient information based on perceptions of gender, position, department, and hospital/service. Culture has also been identified to influence knowledge sharing within the police (Abrahamson & Goodman-Delahunty, 2014). Within the health service there are trust barriers to sharing where one profession perceives themselves as "more professional" than other groups (Adams & Blandford, 2005; Gider et al., 2015). Gider et al. (2015) highlights a tendency for health professionals to repeat tests because of accountability and this trait is repeated within the police (Metcalf, 2017). However, it has been argued that these different perspectives, can and should never be fully bridged otherwise how can practitioners be encouraged to continually develop and transcend their immediate practices and identities (Guile, 2006). This suggests that in sharing outside of areas of comfort practitioners can transform not only their practices but also their identities. Ultimately to support sharing practices, it is important to understand communities of practice (Lave & Wenger, 1991). Like many of the practice based research approaches, theories around communities of practice seek to support effective knowledge sharing across organizational boundaries, thus promoting collaboration and coordination while also increasing productivity and organisational performance (Lave & Wenger, 1991; Millen, Fontaine, & Muller, 2002; Mojta, 2002).

Within the police service, “who” we share information with is diverse. There are statutory partners across the public sector that the police share with including health, education, social services, emergency services and local authorities. In addition to these statutory partnerships, the police share with other organisations; specialist services operating at a local or national level such as victim support organisations, as well as within and between police forces.

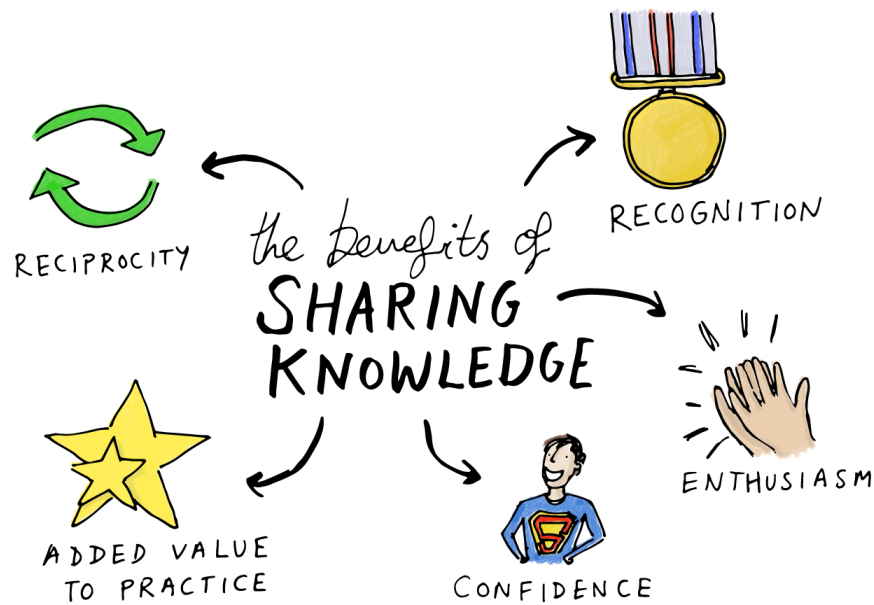
The nature and direction of the sharing relationship between these partners is complex; at one level, data is shared across organisations to support the prevention of crime. At another level, information, knowledge and good practice is also shared to support the development of a solid evidence-base. Key types of sources for knowledge sharing within the police forces, according to Wardle, Scott-Malden, Almond, and Lamey (2009) are colleagues, local police systems, and national police systems. These practices enable the knowledge exchange without necessarily depending on technology. This type of sharing aims to promote coherence at local, cross-force and national levels and support multi-agency projects (APCC and NPCC, 2016). This increasing professionalisation of the police force is supported by sharing and research partnerships with academia (APCC and NPCC, 2016; Goode & Lumsden, 2016).

Alongside these working partnerships, are sharing stakeholders. These include stakeholders who have a direct influence over the sharing research agenda such as the Home Office, the College of Policing, the National Police Chiefs Council (NPCC) and Police and Crime Commissioners (PCCs), together with stakeholders with indirect influence over the sharing research agenda but whose input will be important to producing relevant findings, e.g. police officers, police staff, police volunteers, the public and communities.

3.2. Why do we share?

When we review sharing and knowledge exchange it is important to understand motivations and benefits within an organisation as well as sharing needs. Successful organisations manage knowledge to obtain competitive advantage and improve work performance (Almuhairi, 2013). Hartley and Benington (2006) identify that knowledge sharing can generate enthusiasm and confidence for personal practice through practice based comparisons. This personal benefit could encourage sharing, but Riege (2005) identifies within the management sector personal barriers to sharing are associated with: communication skills, social networks, culture, status and lack of time or trust. Lips, O'Neill, and Eppel (2011) reviews cross- service motivators for sharing in New Zealand social services as a 'need to know' basis and through trusted professional relationships. Patrick and Dotsika (2007) argue that we share because we see it providing added value to our practice. Central to reciprocity in sharing is the notion of 'value' ascribed not only to knowledge but also to organisational roles, practices and evidence based practice. Jones, McLean, and Quattrone (2004) discuss aspects of change in relation to three factors: mediation, value ascribed (both good and bad) and repercussions. These factors interact with each other, with the importance of each factor varying when viewed from individual versus institutional levels. Rice (2007), in evidence based practice, highlights the role of discipline-based research as opposed to generic, practice-based initiatives, by highlighting the value of different types of expertise, knowledge and evidence-bases. However, healthcare has found it almost impossible to prove a ROI (return-on-investment) for knowledge sharing as the benefits to practice may be long-term (Gider et al., 2015; Murphy & Adams, 2005). In the NHS, this has been partly overcome through "impact cases", i.e. anonymised patient descriptions documenting how things could have gone wrong without knowledge sharing (Gider et al., 2015). However, within healthcare, training has been found to influence why professionals do or don't share as "triage" training prioritises solving patient problems rather than reviewing evidence (Gider et al., 2015)

Many of the motivators for sharing within the police are the same as those for other services, for example financial and time pressures have increased the need for cross force, regional and national sharing structures (Metcalf, 2017). In addition, the Leadership and Learning Report (Metcalf, 2017) identified a police-specific set of drivers for sharing. These included new forms of criminality, e.g. cyber-crime, necessitating new ways of interacting and sharing between police forces, and increased globalisation and digitisation requiring a more agile police response.



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Sharing evidence from mistakes or failures offers an important route to improve services. The aviation industry has an impressive safety record, built up through a positive and transparent attitude to accidents/failure that is not only focused on punitive responses. Aircraft have equipment that records data that can be and is analysed in the event of an accident. The industry accepts that unforeseen contingencies may arise (Syed, 2016 p10) but also that it will learn from them so that failures are not repeated. Yet it does not seek out scapegoats. There is a systemic attitude in the industry, a cultural attitude that builds in learning from failure. "Mistakes are regarded as learning opportunities" (p27) and the report of the investigation is available to everyone (Syed, 2016).

Within computing failure has been re-framed as mistakes and considered significant as a learning point to be studied towards success (Glass, 1978; Mehnen, 2009) in some areas even a mark of innovation. "Everybody makes mistakes – we all make one eventually if we just work hard enough! This is good news and bad news. We learn from mistakes but mistakes are also painful and could turn out to be costly in terms of money, reputation and credibility." (Mehnen, 2009).

3.3. What do we share?

As we have noted, social practices shape how we share and, in turn, who we become (Lave & Wenger, 1991). However, although knowledge may have its roots within a formal discipline area (e.g. history, biology, mathematics) a broader perception of what 'knowledge' is required for sharing that reviews; data, information and knowledge. Broadly data comes from the Latin 'datum' a piece of something, a fact, a starting point which is processed. **Empirical data** details a systematic grouping of data that does not answer a specific question (Quigley & Debons, 1999). For example, the number of speeding cars on a stretch of road on a

particular day. **Procedural data** presents systematic procedures and manipulation of policies (Lakoff & Johnson, 1980; Wiig, 1994). For example, the procedure for taking a statement from a witness. **Interpretive data** has been processed through analysis and data analytics (Lakoff & Johnson, 1980; Van der Speck & Spijkevert, 2005). For example, the reports produced by data analysts. Finally **experiential data** can be defined as simple observations from personal experience (Carr & Kemmis, 1986; Davenport, 1997). For example, community support officers' understanding of the social dynamics of the community they work in.

Information is frequently defined as data with assigned meaning (Choo, Detlor, & Turnbull, 1998; Davenport & Prusak, 2000) and assigning some purpose for the data (Choo et al., 1998; Davenport, 1997; Thomas & James, 2006; Van der Speck & Spijkevert, 2005) often which is procedural in nature (Nonaka, Takeuchi, & Takeuchi, 1995). Evidence-based practice has increased the role of 'empirical information' across management, educational, medical and police practices (Altman, 1996; Biesta, 2007; Fairhurst & Dowrick, 1996; Horner et al., 2005; Kitson, Harvey, & McCormack, 1998; McKibbin, 1998; Wessely & Friebe, 2007). This has highlighted the importance of information being developed through rigorously answering questions of 'who, what or where' in many cases in order to change perceptions (Davenport & Prusak, 2000; Quigley & Debons, 1999). However, practice based evidence is a movement within healthcare which has highlighted the concept of collecting practice evidence as a starting point for research (Green, 2008). **Experiential information** relates to part of the concepts of data organized around a situation with contextual and embedded tacit understanding (Thomas, 1998; Thomas & James, 2006; Wiig, 1994).

Finally different knowledge bases have been debated by philosopher and theorists for centuries (Stenmark, 2001, 2002). Within the information science literature **empirical knowledge** is defined as valuable information for the human mind that rigorously answers the question of 'why' or 'how' (Davenport, 1997; Quigley & Debons, 1999). Assigning further meaning through processes, know-how and methodologies has been argued to result in what could be called **procedural knowledge** (Van der Speck & Spijkevert, 2005; Wiig, 1994). However, there are arguments for personal, everyday craft and **tacit knowledge** (Carr & Kemmis, 1986; Davenport & Prusak, 2000; Foucault, 1988; Giddens, 1984; Thomas & James, 2006; Ziman, 1991). Tacit knowledge presents knowledge that has justified beliefs, truths, judgements and know-how (Choo et al., 1998; Nonaka et al., 1995; Wiig, 1994). Organisational culture determines what we share as people; meanings, learning and assumptions the accumulation of which becomes a pattern of beliefs, values and behaviours in an organization (Schein, 2004). Lips et al. (2011) noted that professionals make the distinction between this informal 'soft' knowledge and what they call formal 'hard' knowledge, assigning more value to the latter type. Differences between people's understanding of what is valid and valuable can cause problems in sharing when one person only values research quantitative data and another only values real-world experiences.

Inter-sector knowledge sharing has been found to be inhibited by differences in policies. For example, sharing the same knowledge between voluntary and public sector organisations with slightly different safeguarding policies has been found to produce significantly increased sharing barriers. The same knowledge was rated, within the voluntary sector as red/high risk whilst in the public sector it was rated as orange/moderate risk (Gider et al., 2015). The different ratings for the same knowledge can result in different norms around eligibility and entitlement when sharing between services and can act as a barrier to sharing. There have also been identified difficulties in sharing knowledge in the healthcare sector, to meet the

needs of professionals. It's important to consider when sharing this knowledge that those receiving it, such as healthcare professionals, can immediately internalise and utilise it. For example, healthcare professionals were found to need specific information giving an understanding about the patient's background, medical history, current conditions, and medical procedures that have previously been performed (Yan, 2009). When healthcare professionals receive knowledge from other sectors they have been found to report that the knowledge that has been shared is "of very little use" because it does not relate to their needs and potential usage for that knowledge (Chen, 2011). What is considered as irrelevant in one sector is an essential piece of information in another sector. Du and Long (2008) report that this process is particularly problematic when a healthcare referral requires interdisciplinary specialists at both ends. Kitson et al. (1998) argued that a process of successful research and practice sharing relies upon three core elements; the nature and type of evidence, the practice situated context for implementation of research and the process for research translation. However, all of this requires a common frame of reference for terminology and language understood in the same way by all parties sharing the knowledge. There are also complications when reviewing sharing beyond research and practice sharing to the full complexity of all forms of knowledge sharing.

Police forces collect and store large amounts of data, so the legal framework within which this data may be shared between forces and with statutory and non-statutory agencies is a key factor in sharing decision-making. The new EU General Data Protection Regulation (GDPR) coming into force in May 2018 applies to both cross-border and domestic data processing and sharing and will protect the personal data of individuals involved in criminal proceedings, whether as witnesses, victims, or suspects. In addition it will "facilitate a smoother exchange of information between Member States' police and judicial authorities, improving cooperation in the fight against terrorism and other serious crime in Europe" (European Commission, 2017).

The UK Law Enforcement Directive (LED) (Gillingwater, 2017), and GDPR Data Protection Bill (HL) Woodhouse (2018) has explicit guidance on data sharing. The LED covers why data is collected (e.g. lawful and fair data processing for legitimate purposes), how it is processed (accurate, updated, secured as appropriate to the risk, review of time limits), whose data (distinguishing between data subjects), and access to personal data being made available to data subjects. There is an emphasis, depending on risk, around authorised access.

In a review published by Merrett (2017), Data Commissioner Elizabeth Denham noted that the GDPR has limited impact on the police, though there will be a closer relationship between the Information Commissioners Office (ICO) and the police, with the ICO responsible for monitoring the implementation of the LED. The LED requires police to:

- log what they are doing with data & how long they are keeping it for
- have mandatory breach reporting
- appoint data protection officers who are accountable to senior management

Key to the LED is data processing and storage that is proportionate to need. Police forces can hold data longer than other organisations but they should not ignore data retention principles. "Data protection law should not unduly prevent the police from detecting, investigating and deterring crime, but it does demand proportionality", states Merrett (2017). Data protection legislation is sometimes seen as a barrier to sharing, but this is because it is poorly understood.

3.4. How do we share?

As we have reviewed who shares, why they share and what they share we also need to review how they share. Lips et al. (2011) identifies that professionals use different knowledge according to the different core business needs. This would imply that the same sharing question could be answered with different types of knowledge depending on what the business need is. This can produce problems in inter-organisation sharing where the definition of needs varies. Hartley and Benington (2006) identified key enablers and barriers to inter-organisational sharing as common recognisable features from those sharing and those receiving information. Carlile (2002) identifies this as a shared and sufficient syntax as the boundary (syntactical). Hartley and Benington (2006) highlight that different processes and policy contexts can also impact on gains and costs encountered with the sharing process. Carlile (2002) breaks this down into semantic differences that exist or emerge from individuals who have different interpretations of a word/event. They also identify pragmatic differences due to perceptions of knowledge that is localised, embedded and invested in practice. Adams (2000) defines the user (who shares the information) and their context into three sharing factors the; information receiver, information sensitivity and information usage. These factors interact and impact upon each other to either enable or inhibit sharing and perceptions of privacy invasion. Within an organisational context there is a need for an effective infrastructure to manage knowledge effectively and to support the processes of knowledge sharing, transfer and use (Abrahamson & Goodman-Delahunty, 2014).

Within knowledge exchange the role of intermediaries can compensate for the inevitable gaps in technology design and user's ability, awareness and motivation (Adams, Blandford, & Lunt, 2005). The Policing Vision 2025 report (APCC and NPCC, 2016) also identified sharing intermediaries as facilitating greater indirect benefits (such as changing roles and responsibilities, improved social interaction) rather than direct benefits (such as cost and time saving, skills acquired). These intermediaries have been argued to be 'boundary creatures' (Adams, FitzGerald, & Priestnall, 2013; Haraway, 1991; McGinnis, 1999), 'boundary spanners' (Janowicz-Panjaitan & Krishnan, 2009), 'brokers' (Bryant, Forte, & Bruckman, 2005; Burt, 2005; Preece & Schneiderman, 2009). These people who cross boundaries have been noted as both insightful (Burt, 2005) and horrific (Haraway, 1991) as they bring new ideas and practices into the domain. This relates in police and other domains to the widely used concepts of mentors and champions.

Technical systems have been found to improve the likelihood of successful sharing practices (Patrick & Dotsika, 2007). Technology can improve the speed and efficiency of police in identifying persons, places and suspects as well as crime reporting, patterns and trends. This can reduce the time officers spend in the field, speed of administrative and organizational performance as well as the capabilities of the police and their information exchange with the public (Groff & McEwen, 2008).

The technical systems that police use for sharing operational and strategic data, information and knowledge include Polka, Yammer, Hydra, Police National Legal Database (PNLD) and the Police National Statistics Database (PNSD) (see Appendix 1). Technologies such as social media (e.g. Twitter, Facebook) has been used extensively for police sharing. The Comparative Police Studies in the EU (COMPOSITE) project, has identified best practices of European, including the UK, polices forces, in adapting social media (Denef, Kaptein, Bayerl, & Ramirez, 2012). These have been grouped in nine categories: a source of criminal information, having a voice (increasing trust with the public), pushing information

(publishing news), leveraging the crowd wisdom (gathering intelligence), Interacting with the public (answering public questions/sharing knowledge), community policing (collaborating with the public), showing human side of policing (less formal tone), supporting police IT infrastructure, efficient policing (increasing efficiency of communication). The police are frequently releasing guidelines on how police staff should use social media appropriately, including what can be released and what cannot and good practices for personal use of social media (National Archive UK, 2014).

There are however, several barriers encountered through using technology for sharing. These are:

- Incompatibility of data and platforms across forces and agencies (Uthmani et al., 2010) restricting access at different levels (Lips, O'Neill, & Eppel, 2010) and between systems (Koper, Lum, & Willis, 2014) and complicating sharing (Wardle et al., 2009).
- Staff resistance due to limited technical proficiency and staff turnover (Lum, 2013; Plecas, McCormick, Levine, Neal, & Cohen, 2011), perceived intrusiveness (Koper et al., 2014) and the assumption about the police organisation (Koper et al., 2014; Lindsay, Cooke, & Jackson, 2009; Riege, 2005).
- Technology sustainability with expensive maintenance (Lum, 2013; Plecas et al., 2011) and instability until new work routines finalized (Koper et al., 2014). There are also issues with some technologies (e.g. iQuanta) of incentives for keeping information up-to-date (Wardle et al., 2009) and a slow generation of policies and guidance.
- Shared platforms have limited consultation leading to poor interoperability and multiple authentication routes for users (Wardle et al., 2009) cause tensions between technology and policing needs (Riege, 2005; Sanders & Henderson, 2013).

4. Knowledge Sharing Findings: Barriers and Enablers

This section presents the findings from the approaches to sharing questionnaire, interviews and focus-groups.

4.1. Findings: Questionnaire

The Sharing Questionnaire aimed to identify police motivations and approaches to sharing, the why and the how. It was based on the Biggs Study Process Questionnaire (Biggs, 1987) that had been modified to identify motivation for sharing (surface, deep and achieving) and approaches to sharing (surface, deep and achieving). See Appendix C. for the questionnaire text. For example, a **surface motivation** for sharing would be sharing because you are told to do so, a **deep motivation** would be because of a belief that sharing is of value and an **achieving motivation** would be sharing to improve chances of promotion. A **surface approach** to sharing would be following sharing guidelines and processes without question, a **deep approach** would be identifying situations where sharing will improve police outcomes, an **achieving approach** would be systematically identifying sources of knowledge to get the job done. Figure 1 visualises the responses to illustrate the findings that, on average, officers demonstrated a **deep motive** for sharing and used **achieving approaches** to getting the sharing done.

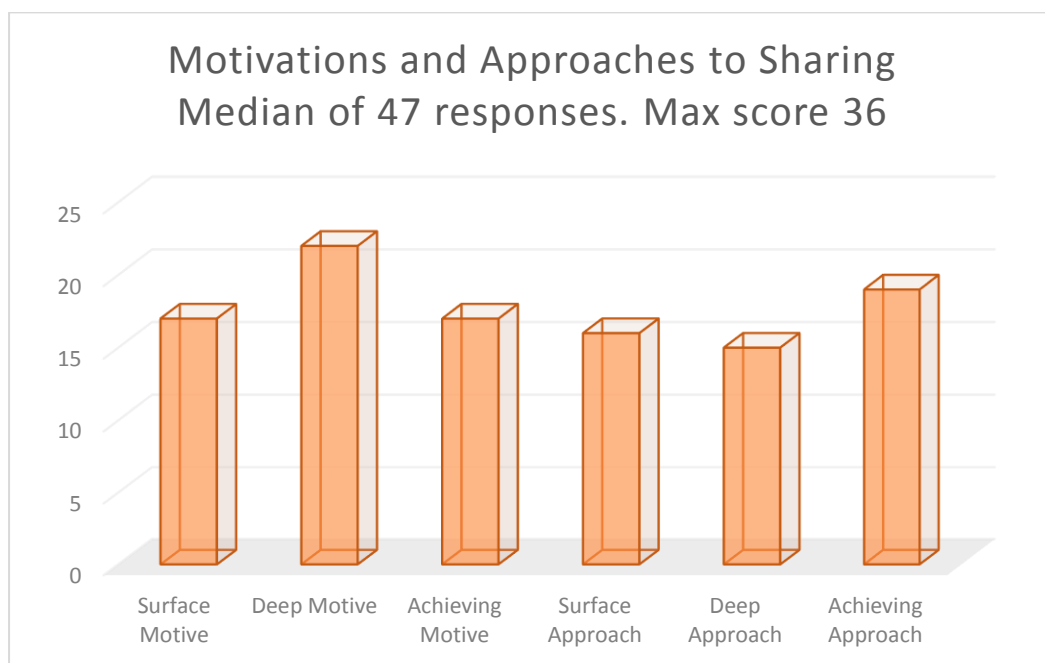


Figure 1 - Motivations and Approaches to Sharing

Regardless of rank and staff status the majority of police (N=47) who completed the questionnaire tended to have a deep motivation to sharing (they really want to understand deeply issues through sharing). But across the ranks they tend to have an achieving approach, with some surface approaches to sharing (to get promoted and get the job done). Ultimately

these approaches are not satisfying for them as they never progress their deeper understanding of issues. One senior officer was found to use an array of all approaches and notably scored much higher than the other survey respondents on deep approach to sharing strategies. This will help the senior officer develop a deeper understanding of the issues around sharing than the others. One approach to counteracting the issue of lack of deep approaches to sharing is to put policies and processes in place that support how the police share so that they achieve a deeper understanding of the issues they are seeking. To some extent this isn't unusual in a domain which hasn't had a long history of evidence based approaches, or more specifically reflective learning.



The next four sections are broken down into who shares, why they share, what they share and how they share. Within these findings sections we identify first the sharing enablers and/or current approaches then the barriers to sharing. These results were based on the findings obtained through the interviews and focus groups.

4.2. Findings: Who?

Sharing was very much linked to personal relationships which was noted as both an enabler and a barrier. Identification of those being shared with was noted as protecting the privacy of a person associated within the data and information.

“I think you have to know who you're sharing with before you share it.” (Police Constable).

However, this extended beyond personal data and information into all forms of data and information sharing. Often this related to a desire for reciprocity through the sharing and sometimes this was noted as a way to increase professional reputation for the individual sharing.

Sharing with statutory services such as blue light collaborations, local government, prison and probation services, social services, and health services was well understood. However, this was hindered by diverse technical systems which might facilitate flow of information in one direction but inhibit *reciprocal* sharing.

“It’s a barrier to sharing and learning, when everyone is using different information systems or products” (Police Staff)

4.3. Findings: Why?

The rationale behind sharing varied according to the nature of what was being shared and who it was being shared with. The police share knowledge within and between forces. Operationally, the police share also information and data with other agencies in order to support the prevention and detection of crime.

“Sharing information and data [...] helps us to understand what the nature of crime, criminality, anti-social behaviour is within the local area” (Police & Crime Commissioner)

The survey responses shown in Figure 1 suggested that the police have deep motivation for sharing. This finding was confirmed in the interviews and focus groups; they support two-way knowledge exchange, clearly seeing benefits for both sides:

“I think we should be doing knowledge exchange, whether that’s one-way or two-way, but I think the exchange word is important, so it’s giving something and taking something.” (Police Staff)

Alongside this was the need to share good practice within and between police forces. However it was seen as important that the knowledge exchange was two-way:

“Another force wanted to come in, “Well can you give us all your policies and how you did it? And your templates and your agreements? Your legal advice?” I don’t know how sharing would be with that, [...] we might want a contribution.” (Inspector)

The police collect an enormous amount of data, but have limited research and analysis capabilities to make use of it. A strong motivator for academic/police sharing and collaboration is to translate this data into useful knowledge which can feed into police practice rather than be lost. Partnerships between the police and academia were seen as enablers, supporting better use to be made of police data to result in a productive connection between research and police practice.

A further enabler is the changing demographic of police officers. The younger generation of police have different attitudes to sharing having grown up with collaborative digital technologies. Their understanding and attitudes to sharing could support sharing within the police, however there is also the risk that having joined the police at a young age, they become indoctrinated with the traditional approaches:

“We have people who join [...] quite young [...] like 20, 21. They have very little experience of other organisations and can become quite institutionalised [...] That lack of understanding can lead to fear at times, and a sort of deferral of decision to a more senior officer to make a decision.” (Chief Inspector)

The police tended to create personal networks of contacts within the force, and with other agencies. These contacts acted as ‘gatekeepers’ providing access to knowledge from within their organisation, enabling sharing across a network of trust.

“For me personally, it’s about networks. So, I get an awful lot out of learning from other people” (Police Staff)

Once the police have developed a relationship of trust with a network of contacts, both within the force and with other forces and partner organisations, it is easier to share. However some forms of sharing are more ‘safe’ than others. For example, one force has been trying to identify good practice around change management and has been in contact with the Fire Service. The Fire Service invited representatives of the police force to sit in their board so that they can watch and learn and absorb what is going on. This, for the Fire Service, whilst labour intensive, is ‘safer’ than sharing a board paper which may contain confidential or otherwise risky information. Sharing a board paper or an email carries with it a greater level of ‘perceived’ risk as it is traceable to the individual who shared it. These ‘safe’ forms of sharing are supported through personal networks of trust and can be lost should individuals change roles or workloads limit this type of engagement.

Police culture was noted as a barrier to sharing alongside the negative impact of the HMIC who were seen as “**open but not used to change**”. There was a feeling that the process of sharing was coordinated by the College of Policing setting the rules, with the Police adhering to the rules and the HMIC being there to check this adherence.



“I think there’s not a great sharing culture in policing. To a certain extent, over the years, forces felt that they were in competition with each other because of the HMIC grading system.” (Detective Inspector)

“By actively sharing something, you might be calling into question something that somebody else has done, or the way that they do something. So, there’s a kind of cultural barrier there as well” (Police Staff)

Within the police culture, there is a strong culture of **blame** and **risk aversion**. In some senses, this acted as an enabler for sharing – sharing provides an audit trail that could later be used to justify actions. However fear of making mistakes and being blamed could inhibit sharing for fear of consequences.

“That fear of getting it wrong. And getting what we call a b*****g, I suppose”
(Chief Inspector)

The **promotion process** within the police was also cited as a barrier to sharing. The promotion process is competitive not cooperative, and you do not maintain a competitive advantage by sharing with colleagues (who are viewed as competitors). Connected to this is the expectation, within the police, that officers move roles every two or so years, therefore networks are ephemeral and transitory.

“The police like to move our staff around every 18 months or so. [...] People expect you to move in less than two years. So, a lot of sharing information can go; personal relationships, trust”.
(Chief Inspector)

There is often no clear process in place to capture this tacit knowledge, so the network of trust is lost and has to be re-created from scratch.

Organisational structures emerged as a barriers to sharing, making it difficult and time-consuming to find the right person. Staff directories can be out-of-date, incomplete or difficult to find, and are often just lists of names without any useful additional information such as expertise or areas of responsibility.

“I don’t know who to go to in my local council without some substantial digging to find out who I need to talk to” (Police Staff)

Such organisational barriers occurred not only between the police and other agencies, but also within and between police forces. With time, it is possible to build up a network of contacts, but effective processes can help. In one force, members of a department had



responsibility for building up contact networks in different areas, with this division of labour helping to reduce the time spent searching for the right person to speak to.

In general, there was also felt to be the potential for forces to have a fearful even acrimonious relationship between HMIC and the police, which it was felt produced a risk-averse culture. Officers with experience of working with the HMIC found it productive and positive, but commented that the commonly held belief that the HMIC were adversarial led to a culture of risk-avoidance and a barrier to sharing.

“The HMIC is NOT just out there to bash you. And I think that even just taking that initial position on HMIC stops you working with them properly. If you think the regulators are gonna come in and beat you with a stick, then every decision you make will be risk-averse.” (Detective Inspector)

This fear of getting things wrong, feeds into an unwillingness to share mistakes. If the police don't learn from their mistakes, they are likely to repeat them.

“You don't just learn from successes, you also learn from things that fail, but you'll find people are very reluctant to share what doesn't work.” (Police Staff)

Time and workload also had a negative impact on sharing. Abrahamson and Goodman-Delahunty (2014) noted that: “Information will be briefly scanned (not fully considered), ignored, deleted, or filed for expediency, decision-making capabilities and ability to focus on critical elements will be reduced, creating potential risk management issues for organization due to missed sharing/application of information or knowledge” and this was echoed in the comments of interview and focus group participants.

“Because we are all so incredibly time-pressured, while we understand that there's information out there that might be of use or help to other people, the practical reality of being able to make a space to share in an efficient way is quite difficult.” (Police Staff)

“I think our roles are so demanding and our workloads are so significant. I think that that's a barrier” (Police Constable).

It was also seen that sharing was much easier for officers and staff in higher ranks. However for lower ranks it was often felt that sharing decisions needed to be deferred up the hierarchy. This is in part linked to notions of 'risk' and risk avoidance.

“But a lot of leaders won’t try anything different unless it’s got a stamp on it from HMIC saying that it works, so we’re never learning or sharing anything except for what the inspectorate’s told us to.” (Detective Inspector)

However, officers on the frontline reported that they would sometimes share in order to get the job done.

4.4. Findings: What?

The research identified that police, across all levels, understood the benefits of what they shared especially with regard to operational activities such as predictive policing³.

“It’s all about making people’s lives better. Protecting people” (Chief Inspector)

Currently operational data is considered as frequently shared both within and between forces, at all levels, and understood to be facts, figures and crime statistics, missing persons, minutes of meetings and incident data. The Data Protection Act was noted by some police as valuable in protecting people’s rights to privacy and protecting data and as something which had increased effective procedures for data management.

Information was understood across different policing levels as containing more meaning than data. As such, information sharing was noted as more invasive than data sharing, with increased personalised meaning associated through the processing of data into information. The interaction between information and intelligence was often used interchangeably. Consideration was given to reviewing and de-sensitising information before it was shared, thus incurring more time and effort. The role of technology was identified as invaluable in dealing with the large volume of information now available. In particular, online information sharing was highlighted as essential in both operational and strategic activities.

Knowledge was talked about in two different ways that of ‘evidence based practice’ and that of ‘best professional practice’. The former was closely linked to research evidence and the rigour of effective research evaluations with the College ‘what works’ often noted in relation to this knowledge. The latter knowledge was associated with professional judgement.

“If we’re brutally honest when we talk about sharing knowledge- we’re talking about sharing professional judgement” (Detective Inspector)

³ **Predictive policing** refers to the usage of mathematical, **predictive** and analytical techniques in law enforcement to identify potential criminal activity. (Wikipedia)

Whilst sharing operational data within force and between forces was noted as far more effective than in previous years, it was highlighted as particularly problematic outside the police. This was identified as both sharing from and to the police from external bodies. One of the key barriers was misconceptions around the data protection and data management legislation both within and outside the police. It was perceived that there was a time-intensive workload associated with conforming to protocols (e.g. resetting passwords, reviewing data sensitivity) for identifying what could and could not be shared due to the Data Protection Act. Poorly communicated and misunderstood restrictions around appropriate data access was identified as resulting in reduced sharing:

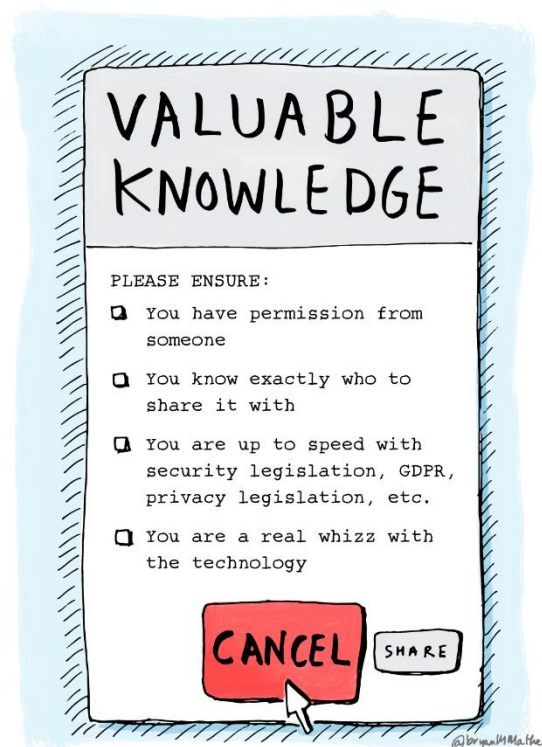
**“The easy thing to do is just be very cautious and not share.”
(Police Staff)**

Once people and their tasks were verified (e.g. obtaining background information for transferring staff) the systems supported the process. This was perceived to significantly increase with the introduction of the GDPR. There was also staff time associated with the freedom of information (FOI) regulations although it was sometimes felt that certain FOI queries were flippant took up too much time.

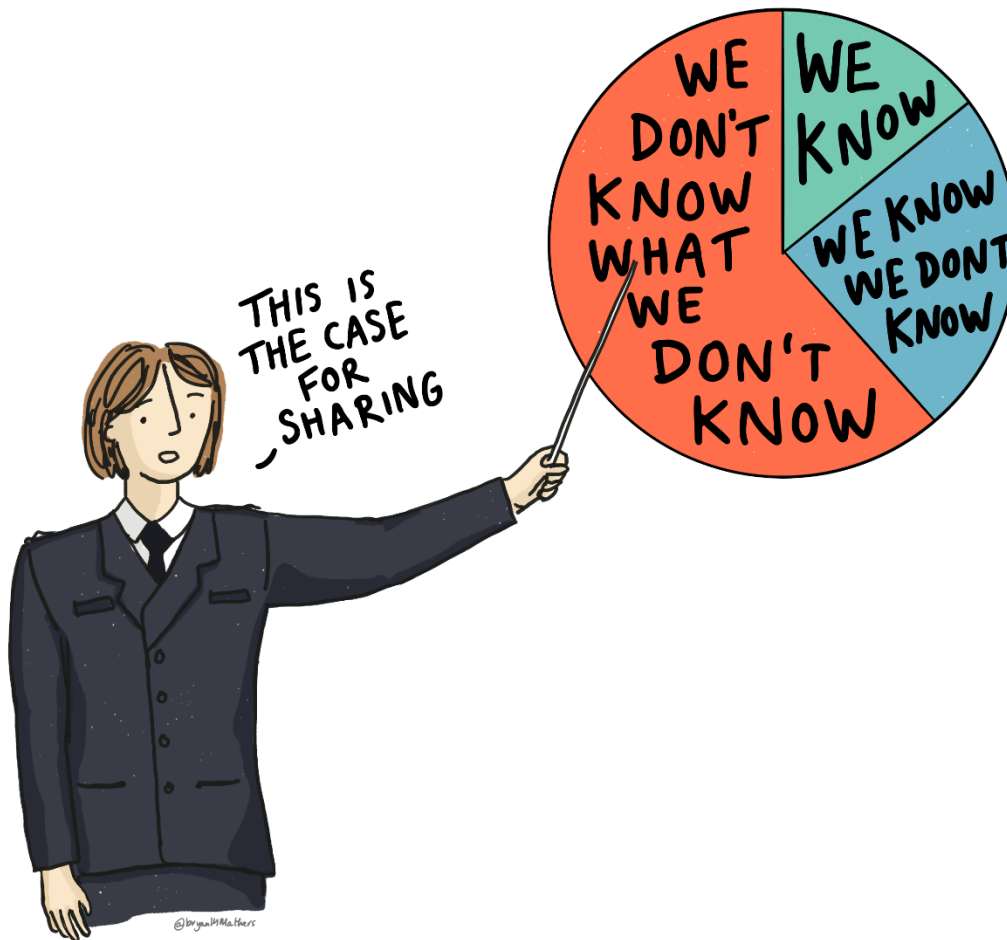
Whilst systems and people were in place to ensure effective support for data protection there perpetuated a risk-adverse culture to data sharing beyond personal information into institutional procedures and policy. This also resulted in an increased perception of security risks from breaching data protection and an elevated perception of fines that could be received from sharing. One participant noted this as a key myth within the police force. Across forces interviewed it was noted that often external organisations used the Data Protection Act as a barrier preventing sharing. This was highlighted not only a cost for police time and effort but also as impeding investigations.

**“...it is too much hiding behind what was the Data Protection Act, around what can and can't be shared”
(Police and Crime Commissioner)**

Management information was noted as poorly shared, especially across forces. Often this related to strategic information of mistakes made that could support another force from avoiding making the same mistakes. Whilst some senior officers are happy to discuss this in a one to one situation this was noted as poorly shared in an online format. Accountability for mistakes made in a written format was noted as a key barrier to online sharing of this information. This has, in turn, impacted on practice having a poor awareness of what information could be available to share.



“We don't know what we don't know.” (Police and Crime Commissioner)



As has been noted knowledge has become a divide between knowledge drawn from professional judgement and research evidence. Police noted that this resulted in multiple different answers to the same question. It was also resulting in a difference in ascribed value associated to these different types of knowledge, with one type of knowledge more important to some and less important to others.

“So in terms of what is considered "knowledge", operational experience still holds primacy over rigorous research, evidence.” (Detective Inspector)

The variations in ascribed value for different types of knowledge were found to be producing an emotive battle within forces over what is and is not valuable to share. In an anecdotal example from one officer’s experience he reported that he had tweeted that he was taking leave to finish an article. The emotive twitter response exposes the degree of feeling felt by another officer around this debate over the value of different types of knowledge:

"Can you remember when you stopped being a cop? This academic b***** is annoying cops on the frontline. I can't believe you can't see it. Me-time? Cops don't even get refs. You symbolise everything that cops resent. Get real, relevant, and appropriate, and enter the conversation."
(Tweet)

4.5. Findings: How?

Current enablers can be divided into those that are non-technical and those that are more technologically-supported. Non-technical enablers of knowledge sharing in the police include asking a colleague (face-to-face or via phone), sharing within and between forces via word of mouth; conferences, 'unconferences'⁴; research cafes; academic collaborations and via organisations or authorities such as HMIC or the Police ICT Company.

Knowledge is also shared through technologically-enabled means, including social media (e.g. Facebook, Twitter, Instagram); internal networks (e.g. Yammer); blogs; text messages; electronic surveys; search engines (e.g. Google); video conferencing (e.g. Facetime, Skype – also used by some forces to stream live feeds of crime scenes back to a central office) and external websites such as universities and other respected online sources (National Crime Agency, College of Policing). Many of our participants stated how valuable resources were that were created by, or specifically aimed at supporting, the police. These included Home Office resources (e.g. Home Office Counting Rules for recording crime); the College of Policing Research Map; National Policing Library; National Policing Database; the Police Professional; and POLKA (the Police OnLine Knowledge Area). Opportunities regarding professional learning and training were also seen as key for knowledge sharing, with online organisational learning/training platforms and webinars mentioned as useful for sharing knowledge. Some police-specific systems are also clear enablers of knowledge sharing, such as Athena, 2Serv, Storm, SafetyNet.

⁴ The term 'unconference' is a loosely structured, participant-led conference emphasizing the informal exchange of information and ideas between participants.



However, a number of barriers exist in terms of how knowledge is shared. For many police staff, a primary barrier is lack of confidence, particularly in terms of using the technological systems that exist to support knowledge sharing (such as those mentioned above – both police-specific or more general/publically-available). Practices regarding social media vary widely, with some police staff being conspicuous and avid users (often those in senior positions) but for others, needing particular permissions or feeding information through to specific ‘authorised’ users or accounts. Working with external companies such as well-known social networking or online auction sites was also mentioned as being problematic. Some authentic policing accounts were closed because users wrongly reported them as ‘fake’ however when police staff attempt to contact the relevant departments, their requests are ignored or take many weeks or even months for a response to come through.

Other substantial technical barriers include systems not integrating with other, or working in the way that they were expected to work. Particular frustrations include having to ‘double-key’ to sign-on (thus duplicating effort); frequent password change cycles; and having a lack of shared computer services across associated agencies e.g. police, Crown Prosecution Service, prisons and probation services. For many staff, trying to access information is problematic: this is either to do with issues of access/having sufficient security clearance, or by lack of usability in systems that mean that information is effectively ‘hidden’ unless you know where to look for it. This can also have an effect on inputting data and information, when police staff don’t know “where” to go in terms of uploading and sharing. Multi-agency sharing (e.g. with medical partners) was also reported as inefficient or unsatisfactory, due to the factors already mentioned regarding levels of access or lack of usability of existing systems – one participant mentioned having to use a password on the phone to ensure all parties were happy to exchange information pertinent to a case. Even HMIC was mentioned as failing to provide information when needed and requests to the Police National Database can get delayed, potentially impeding ongoing enquiries. The police’s own POLKA platform was also criticised by police staff, as being difficult to access; with problems regarding individual profiles when staff changed forces (email addresses and hence logins/profiles change); a time lag when joining particular special-interest groups or lack of response when posting requests for feedback or advice. This latter problem is not unique to POLKA however, and is common wherever there are ‘Communities of Practice’ posting to internet forums in general. Some posts are ignored, unanswered or have very limited responses, for various reasons, and additionally many visitors to such sites tend to be ‘lurkers’ who read

through particular items of interest but fail to engage further, and do not post responses to those seeking help. This can be from lack of time or expertise in the topics being asked about, or feeling that their own knowledge is not relevant to their colleagues or perhaps feeling too scared to put their head above the parapet. Likewise, such systems (e.g. Yammer as used by the police) can be a victim of their own success, where popular posts almost have too much feedback, and subscribers to these discussion threads get bombarded with notifications – an unwelcome intrusion for those who feel that their jobs are already too demanding and are continually being asked to do more with less resources. Budgets, available resources and a lack of horizon-scanning in terms of technology, were commonly-voiced barriers, although cultural aspects can also play a part:

“British policing has been particularly cr*p when it comes to providing applications for the front line.” (Police Constable)

“The problem with the technology in the car is, in America [they’ve] had them for a number of years. Their officers can sit there and do that, if we have the same thing we'd be breaching the Road Traffic Act.” (Police Staff)

The impact of these barriers can range in scope. Day-to-day level, they result in inefficiencies in working, delaying ongoing enquiries and leading to frustration from police staff and partner agencies involved in those enquiries. Technology, rather than assisting police, can be an impediment:

“Sometimes it replaces things that occurred that were in place previously that were just simple” (Chief Inspector)

This is particularly apparent when working with specific systems that are often unique to particular forces, and can also have budgetary implications. For instance, one focus group raised the issue of working with external IT providers, who tend to charge a considerable amount of money for their products, but whose systems ended up being almost unusable due to logistical barriers (relating to information security and firewalls) and since these systems weren’t specifically designed with the police in mind, didn’t fulfil their requirements correctly. Additionally, there may be competing commercial products that offer the same functionality, so expertise shared by one force in using that product is of limited use to a force using a different product. However, where systems are shared between the police and multiple agencies, there can be significant risks in addition to significant potential benefits. An example was given where staff from an external agency entered into a police system, some personal details of a victim involved in the high-profile, active police investigation. They didn’t realise that the data entered could be publicly accessed and, when these details became public knowledge, resulted in significant pain and embarrassment for all agencies, as well as the victim.

5. Recommendations

Recommendations made for knowledge sharing have been drawn from the police insights and from research literature, which we refer to here where relevant. These recommendations should support awareness of and an equity for all sharing, shift the culture of why they share to achieve a deeper understanding of their practice that the police desire, to better understand what they can share and not share and to facilitate that sharing process more effectively.

A set of strategic and operational recommendations have been identified that could enable the forces to progress more effectively in sharing. Strategic recommendations have a national scope, operational recommendations are more immediate recommendations that police forces may find easier, or simpler, to implement at a local or national level. Further guidelines are provided on timeframe, (long, medium or short-term) and impact level (strategic or operational)

1. Establish Authorised Professional Practice (APP) standards for sharing to be used in HMIC reviews to enable good practice and Continuing Professional Development (CPD).

It was noted throughout the research that the role of HMIC inspections was essential in reviewing good practice and motivating forces to take on-board good practice. However, several forces noted that the good practice of ‘sharing’ and evidence based practice was not incorporated as part of these reviews. In order to support the HMIC in their review of good practice for ‘sharing’ and ‘evidence based practices’, a set of Authorised Professional Practices (APP) should be developed in these areas. As policing practice needs currently outstretch the current UK policing evidence this will also require international benchmarking of evidence across different domains.

Timeframe: Long-term

Impact level: Strategic

Benefit: High – recognition for effective changes throughout forces

Cost: Medium

First steps:

- Identify ‘good practice’ sharing standards for different practice and CPD needs.
- Identify how these can be used to enhance practice and CPD for HMIC reviews.
- Develop Authorised Professional Practices (APP) for forces and across forces.

2. Review and compare centralised consortium and commercialised development of technologies for sharing and CPD.

One of the common suggestions within the research was to have in place, some ‘ideal technology’ for sharing within and between police forces. Two approaches were suggested;

- A central control system open and accessible by all agencies
- A cross-force consortia to develop cost effective in-house systems to be more robust, scalable and sustainable.

There therefore needs to be a careful review of the applicability for the police with regard to sharing. This would need to have standards for sharing to overcome perceived (or actual) data protection compliance and effective processing, including tags, for sharing (Brickley & Miller, 2014; Hollywood & Winkelman, 2015). Financial and efficiency arguments were given so that the police were not developing, or buying in, 43 different sharing systems to meet similar needs. In terms of designing such systems, technologies used by the police forces are required to assure continuous access and confidentiality. Thus design features that integrate the protection and integrity of sensitive information against cyber-attacks or even routine maintenance problems should be ensured (Hollywood & Winkelman, 2015).

Timeframe: Long-term

Impact level: Strategic

Benefit: Medium – insights on technical solutions

Cost: Medium

First steps:

- Identify different technologies and development models to see how they could enable sharing and CPD.
- Evaluate the cost/benefit for different development models including scalability and sustainability.
- Evaluate comparative cost-effective models for co-developing, with the police, desirable technologies.

3. Identify, review and, if required, develop local and national cross-institution expert sharing networks (ESNs)

It was evident through the research that there were issues of poor sharing behaviours that were occurring on a regular basis. This was both internally to a force, across forces and with external organisations to the police. Scaffolding⁵ sharing with local networks could support a deeper understanding produced through the sharing process. It is therefore essential that local support networks are established to help overcome barriers and poor practices in an effective and locally relevant way. These networks should include not only blue-light services but also other locally relevant organisations that the police share with on a regular basis. It is also important that these networks are linked into national bodies such as; the ICO (Information Commissioners Office), the NCCPE (National Coordinating Centre for Public Engagement) the College of Policing and the APCC/NPCC. There are resources and support mechanisms within these national bodies that can both enable and be leveraged to support engagement with sharing locally and nationally.

Timeframe: Long-term

Impact level: Operational

Benefit: High – slowly changing cultures and mind-sets

Cost: High

First steps:

- Identify locally (and nationally) different bodies that could or do valuably collaborate with the police.

⁵ Scaffolding refers to the provision of structured support.

- Identify the different ranks and levels of police and other institutional members who have the right knowledge and would benefit from the sharing experience.
- Identify equitable processes for exchanging understanding, capturing and managing that knowledge e.g. Evidence Cafés⁶ (Clough et al., 2017).
- Develop systems and processes and champions to enable this activity and report on the benefit from these activities moving forwards.
- Establish reviewing mechanisms to identify how sustainable the network is and what blockers are being put in place that stop it remaining sustainable.

4. Design and develop a 'digital police almanac' as a role directory and sustainability framework within force and across forces.

The findings established how valuable police find communicating with their colleagues in terms of knowledge sharing. In particular the questionnaire indicated the police have a deep motivation to share. However, the understanding of who can facilitate this sharing within another force is shared on a person-by-person basis. This means that those connected are rapidly sharing and overloaded and those who are poorly connected have limited sharing opportunities. A suggestion was made from our police participants for the creation of a digital version of the police almanac (a staff directory, which used to exist in paper form but is no longer produced) in order to facilitate interactions between colleagues. Some of these colleagues may actually be in the next room, or next floor, but they are not known to others outside of their immediate environment. However, there are potential issues in who keeps this up-to-date, as Human Resource (HR) departments are likely to be facing existing resourcing issues, in common with many other areas of policing. The use of crowdsourced updating within the police force, that is moderated by a central unit like HR, would enable rapid updating based upon reciprocity motivations (i.e. 'I want people to learn and appreciate what I do', 'I want to find other people who can help me with what I do').

Timeframe: Long-term

Impact level: Operational

Benefit: Medium – producing more effective points of contact

Cost: Medium – high

First steps:

- Establish a benchmarking activity of roles and responsibilities to similar roles in other forces.
- Develop a framework and structure of comparative roles and responsibilities across forces.
- Develop an online web-based sharing platform for a role directory.
- Identify and update processes and responsibilities to ensure that the database is continually updated.

5. Review and establish frameworks for external verification processes with sharing partners.

⁶ Evidence Cafés are a forum for equitable knowledge exchange between police practitioners and academic researchers, supporting research use in practice, and providing a means for practitioners to influence research.

A sharing validation review, cross-force and internationally benchmarked, should be undertaken to establish and to enable identification of standards to support collaborations and sharing across the police and with external collaborators that adhere to and facilitate safe sharing (Adams, 2000; Adams & Blandford, 2005; Adams & Sasse, 2005). This should include academic partners in evidence based practice and any external companies or IT developers seeking to provide technical solutions to police forces. The provision of verification, limited access and testing tools should ensure that evidence based processes, sharing solutions and software meets the standards and needs required. Any resulting solutions could thus be certified or validated as meeting those standards.

Timeframe: Medium-term

Impact level: Strategic

Benefit: High – for both police and external partners

Cost: Medium

First steps:

- Establish a benchmarking activity for ethical and sustainable processes in data and information usage; these should adhere to the GDPR and LED data protection regulations.
- Develop a framework and structure of comparative roles and responsibilities within partners for data sharing activities.
- Establish the thresholds for different levels of acceptable data sharing and how these would relate to different levels of verification.
- Establish the processes and procedures to put in place that would enable authorisation for sharing and verification that processes and procedures are being adhered to.

6. Develop an evidence support network for knowledge management of evidence-based practice feeding into sharing. Understanding and valuing different types of evidence and knowledge.

As has been established in the research, within some forces there was an eagerness to quickly establish an evidence base for good practice around specific topics of relevance to that force. Many of these topics are operationally relevant and have limited timeframes for identifying solutions. The lack of relevant evidence, time restricted police and limited evaluation expertise within force has led some to seek external market research support. This is costly and can lead to variable quality in the findings identified. It was suggested by several police forces that they require evaluation and research support that is quick, effective and with a deeper operational awareness that can support changing force needs. This is especially clear around the need for a variety of evidence bases to be established and could feed into the other recommendations proposed here for example, the impact cases.

Timeframe: Medium-term

Impact level: Strategic

Benefit: Medium – providing personal support networks

Cost: High

First steps:

- Identify locally (and nationally) different research bodies that could valuably collaborate and support the police.

- Identify the different ranks and levels of police and other institutional members who would have the right knowledge and who would benefit from a deeper understanding or research experience and expertise.
- Identify equitable processes for knowledge management with different types of research and professional judgement and evidence from professional judgement to support understanding, capturing and managing that knowledge.
- Develop systems and processes for experts within different fields to enable this knowledge management and reporting on the benefit from working with the network and knowledge management activities.
- Establish a reviewing mechanism to assess how sustainable the network is and identify any barriers or blockers that are being put in place which prevent it from being sustainable.

7. Establish a job profile and specification for 'data sharing officers' as well a structure for implementing this within force.

As has been identified there are some clear misconceptions across the police around data protection and the introduction of the GDPR. It was also interesting that no one mentioned LED (Law Enforcement Directive) whilst many understood increased restrictions that would directly affect them through GDPR (Gillingwater, 2017; Woodhouse, 2018). Establishing a data sharing officer will ensure added importance within each force is given to effective sharing. This role will either work alongside or be combined as part of the data protection officer role. However, it is important that safeguards (i.e. reviews of balanced parity in the role) should be put in place for combined roles to provide equity through safe and protected sharing not inhibiting sharing.

Timeframe: Medium-term

Impact level: Operational

Benefit: Medium – providing processes and gatekeepers for sharing

Cost: High

First steps:

- Establish a benchmarking activity for job roles and descriptions in ethical and sustainable processes for data sharing and information usage, these should adhere to the GDPR and LED data protection regulations and may well be roles that work with data protection officers or a joint role.
- Develop a framework and structure for implementing these roles and responsibilities within each police force.
- Establish a network across forces that would enable sharing of good practice in data sharing activities.
- Establish and update processes for the implementation of changes in risks and data management within the police and across police forces.
- Establish links between each force and the information Commissioner's Office around safe sharing procedures.

8. Establish training and learner baseline for police sharing needs.

A detailed benchmarking review of understanding and awareness of current and future sharing requirements is required to future proof police understanding. This base-line will

need to review current UK police training across forces, international police training and other sectors (e.g. healthcare) to internationally benchmark police professional sharing needs. Important to identify here is what learning is actually translated into practice rather than simply what is given by training. This will need to review training in data protection, freedom of information and technical systems risks and enablers. As part of this review there should be an establishment of the level of evidence based underpinning within police training and police learner awareness and understanding of this evidence related to sharing practice. This should also ensure that appropriate training methods and pedagogies are used that enhance transfer of evidence based understanding into sharing practice (Gider et al., 2015; Murphy & Adams, 2005). Future investment in training, verification and validation of both training staff and the learners would help overcome lack of confidence in sharing and using knowledge-sharing systems. This review should establish what level of training is and could be required for this purpose leading to police understanding of sharing processes and technology systems, their risks and their enablers through training the trainer requirements.

Timeframe: Short-term

Impact level: Strategic

Benefit: High – changing cultural perceptions of sharing

Cost: Medium

First steps:

- Identify contextual sharing needs for CPD purposes with at national and institutional levels.
- Identify and map how sharing facilitates educational understanding and knowledge retention in the transfer of learning from training into practice.
- Identify pedagogical models that can more effectively facilitate sharing benefits to support the transfer of learning into practice.

9. Develop a systematic and detailed national and international understanding of knowledge sharing/management with enablers and barriers.

This review has established an initial understanding of barriers and enablers in sharing. However, the time-frames ensured that the insights can only be taken as a guide not a detailed picture of practice across the police. The findings should be extended to provide a detailed picture within all forces across the country. For example there will be immense value for each force and national bodies of extending the sharing questionnaire across all forces combined with the other data collection methods to enable a detailed national sharing picture to emerge highlighting blackspots and hotspots of sharing activity. Triangulating this against other measures such as HMIC reports and innovative policing practices will enable correlations to be identified that support future national and local sharing strategies. Selected forces internationally should also be reviewed to establish a benchmark for UK police sharing practice against those in other countries.

Timeframe: Short-term

Impact level: Strategic

Benefit: Medium – benchmarking for all forces that can enable first steps in each force

Cost: Low

First steps:

- Extend pilot literature review into knowledge management requirements.
- Extend this pilot study to capture beyond 'selective sampling' (only those who may want to share) and contextualise data (e.g. statements around HMIC may relate to recent reviews).
- Extend this pilot study inductive analysis to include deductive analysis (e.g. content analysis, frequency of responses, participant role networked to responses).

10. Create a framework for implementing 'impact cases' of evidence based-practice per force

Establish 'impact cases' for evidence based practice sharing that denote anonymised cases where evidenced based practice was used and an account of how things could have gone wrong if the evidence was not used. As noted by Gider et al. (2015) this enabled healthcare to overcome a reluctance to share mistakes due to accountability issues. In this way forces, will not be inhibited in sharing previous mistakes that were made as they were corrected through new evidence based practices. This will also encourage new evidence based practices to be put in place. This may also enable a new culture of learning to be established as forces share how to learn from mistakes.

Timeframe: Short-term

Impact level: Operational

Benefit: Medium – shifting culture towards valuing EBP

Cost: Low

First steps:

- Identify force and cross force mistakes. Highlight that if an organisation is innovating it will be making mistakes.
- Identify evidence-based approaches that have been made to overcome these mistakes.
- Implement, evaluate and review how well these approaches have overcome the previous mistakes. Share with others these 'impact cases' of overcoming mistakes made.
- Develop a regular communication on changes in data sharing and management across the police feeding into CPD and review of adherence to procedures.

11. Evaluate the relevance and effectiveness of different mechanisms for sharing and learning.

There are wealth of different sharing technologies and mechanisms for sharing and learning how to share which need to be evaluated for police needs to ensure that individual forces do not waste time and resources on specific solutions that would never meet their desired outcomes. In particular, it is important that the design and use of systems and practices allow for the potential to appropriately scaffold⁷ sharing to develop a deeper understanding through the process. The following suggested approaches are an initial starting point for some ways to technically support sharing that need to be reviewed.

⁷ Scaffolding refers to the provision of structured support.

Webinars are a fast way for reaching wide audiences, and especially in a time of crisis, when policies and priorities change rapidly. Webinars are designed and adapted and very quickly (Composite, 2014). Participants were also keen to suggest new ways of training, including use of Virtual Reality (VR) and gaming and simulation technologies. VR is already used at the Open University to help law students practice their legal education presentations to a simulated audience. The current app (Open Justice VR) includes different scenarios including a classroom of children, a courtroom and a prison. In the last few years, VR technologies have become scalable and widely available to the general public, so a VR headset can be bought from a high-street store for less than £10. However, research into the effectiveness of VR for learning and staff training is still in its infancy, so more work is needed to explore effective models and frameworks by which this skill, and knowledge, development can occur.

Much research has been published into the value of learning from simulations and games-based technologies. Indeed, previous work from the Open University led to the development of a child interviewing simulation that has been used and highly rated by police in terms of innovative staff training. Plans are currently in progress to enable this simulation to be made more widely available to other forces.

Other potential technical solutions include speech and text analysis systems, and systems to help analyse data and information in a high-level and intelligent manner. Some work is currently underway in terms of data analytics – particularly in terms of collaborations between police and academics – and the initial findings from this work indicate enormous potential to explore this area further.

We list in Appendix B some additional, publicly-available systems that the police may also wish to investigate, if they would like to look at knowledge exchange using existing platforms.

Timeframe: Short-term

Impact level: Operational

Benefit: Medium – shifting culture using relevant approaches

Cost: Medium

First steps:

- Establish metrics and criteria for what is relevant and effective within the police generally and specifically per force.
- Extend the current evaluation to review more broadly knowledge management mechanisms and systems.
- Support the broader review to include wider knowledge management effectiveness in different domains e.g. healthcare, aeronautical industry.

6. Summary table of strategic and operational recommendations

The following table summarises the recommendations, providing timeframes, impact level, benefits and costs.

Timeframe	Impact Level	Recommendation	Benefit	Cost
Long-term	Strategic	1. Establish Authorised Professional Practice (APP) standards for sharing to be used in HMIC reviews to enable practice and CPD.	High – recognition for effective changes throughout forces	Medium
Long-term	Strategic	2. Review and compare a centralised consortium and commercialised development of technologies for sharing and CPD.	Medium – insights on technical solutions	Medium
Long-term	Operational	3. Develop local and national cross-institution expert sharing networks (ESNs).	High – slowly changing cultures and mind-sets	High
Long-term	Operational	4. Design and develop a 'digital police almanac' as a role directory and sustainability framework within force and across forces.	Medium – producing more effective points of contact	Medium - High
Medium-term	Strategic	5. Review and establish frameworks for external verification processes with sharing partners.	High – for both police and external partners	Medium
Medium-term	Strategic	6. Develop an evidence support network for knowledge management of evidence based practice feeding into sharing. Understanding and valuing different types of evidence and knowledge.	Medium – providing personal support networks	High
Medium-term	Operational	7. Establish a job profile and specification for 'data sharing officers' as well a structure for implementing this within force.	Medium – providing process and gatekeepers for sharing	High
Short-term	Strategic	8. Establish training and learner baseline for police sharing needs.	High – changing cultural perceptions of sharing	Medium
Short-term	Strategic	9. Develop a systematic and detailed national and international understanding of knowledge sharing/ management with enablers and barriers.	Medium – benchmarking for all forces that can enable first steps in each force	Low
Short-term	Operational	10. Create a framework for implementing 'impact cases' of evidence-based practice per force.	Medium – shifting culture towards valuing EBP	Low
Short-term	Operational	11. Evaluate the relevance and effectiveness of different mechanisms for sharing and learning.	Medium – shifting culture using relevant approaches	Medium

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8. Appendix A: List of Policing Systems

Her Majesty's Inspectorate of Constabulary and Fire and Rescue Service (HMICFRS)

HMICFRS visits and inspects the operations of local forces, identifies good practices and shares it on a national basis. Members of this agency are senior staff and they are involved in knowledge management, contributing to the performance improvement of some forces with advice and services.

POLKA

POLKA is a secure online collaboration tool, hosted by the College of Policing, which enables knowledge and information sharing across the police service and some government organisations. Using POLKA enables networking within the police community, asking questions, sharing ideas and practices. Some of the communities on POLKA include the Knowledge Bank, the Authorised Professional Practice (APP), the Intelligence Portfolio, the Penalty Notice processing, and the Criminal Intelligence Analysis.

Yammer

Yammer (<https://www.yammer.com>) is a social networking service that can be used for private communication within organisations. UK police forces, such as Staffordshire, use Yammer for their internal communication within the force (National Archives UK, 2014). Anyone with an approved email address may join the network. Benefits of Yammer when used within the police forces include staff being updated on force projects, promoting collaborative culture to accomplish goals, secured messages that cannot be forwarded outside the force, creation of themed business areas, it comes at no cost. However, the use of Yammer involves some risk as it is hosted by a third party (Microsoft) and thus confidentiality cannot be assured.

Hydra

Hydra is an immersive interactive environment, compulsory element of the Senior Investigating Officers development programme, for training them to better manage critical incidents (College of Policing, 2015). During the course duration, police are using Hydra media and online learning units, with trained and skilled facilitators, who help staff to record difficult decisions while detailing and discussing their rationale. Delegates are supported to consider the impact of their strategy on their institution and the public.

Police National Legal Database (PNLD)

PNLD (<https://www.pnld.co.uk>) is an information resource of criminal justice legislation. It provides all legislation annotated with clear explanations and guidance in plain language, and it is widely used in the forces. It is often used as a checking device to clarify issues before undertaking operations.

The Police National Statistics Database (PNSD)

The PNSD system is a database tool that supports analysing crime and user satisfaction statistics. Each force uploads copies of their monthly and quarterly spreadsheets to the system. The spreadsheets are automatically processed, validated and stored. PNSD supports monitoring the time and place of violent crime and makes sense of trends. PNSD substituted iQuanta, which made data gathering more time consuming.

9. Appendix B: Knowledge Exchange Platforms

The following examples of knowledge exchange platforms, enable the collaboration within and across organisations and can provide some good examples for design features that reflect the police knowledge exchange needs and requirements:

- Slack (<https://slack.com/>) is a cloud-based software for organisational communication that supports collaboration tools and services. All the content in slack is searchable, including files, conversations and people. It integrates a number of third-party services, such as Google Drive, Dropbox, and GitHub. It allows the categorisation of topics that a group of people may be interested in discussing in public or private channels, and supports private conversations through private direct messages between smaller sets of the group.
- Fleep (<https://fleep.io/>) integrates with email, and it stores and shares files. It is a more user-centric platform for communication within and across organisations and suits people who work with people in other organisations or work in a number of groups
- Azendoo (<https://www.azendoo.com/>) is a team communication software that hosts discussion around a specific topic (subjects), with communications happening in the comments. Each group of conversations is filtered for relevance and there is a feature of adding subtasks, useful for project management.
- Bitrix24 (<https://www.bitrix24.com/>) is a project management software that provides group chat, instant messenger, video conferencing, screen sharing and document sharing.
- Stride (<https://www.stride.com/>) is a cloud-based team collaboration tool and includes, file sharing, chat rooms, private messaging, file storage and storage, group video-calling, collaboration tools, integration with third-party applications such as GitHub and Giphy, and history retention.
- EXo Platform (<https://www.exoplatform.com/>) is an open source customisable software that provides chat functions, hosts wikis, task management, project management forums and document management.
- Main features that most of these knowledge exchange platforms share are: searchable discussions, files and people; file storage and sharing, private chat, group chat (private and public channels); integration of third-party services; wikis; task management; video conferencing; screen sharing.

10. Appendix C: Online Questionnaire

Institute of Educational Technology
Police Knowledge Exchange Project Questionnaire

ABOUT YOU

Name:

Rank or Job Title:

Police Force (if applicable):

ABOUT QUESTIONNAIRE

On the following pages (from 3 to 6) are a number of questions about your attitudes towards sharing data, information and knowledge, individually between officers, within your own force, and between your force and other forces. This questionnaire aims to provide background data to help inform our findings on enablers and barriers to knowledge sharing within the police.

There is no right approach to sharing information. Sharing in this context can refer to sharing data, sharing evidence-based best practice, sharing information and sharing knowledge. The following questions have been selected to cover attitudes as they relate to sharing knowledge and best practices, and the wording may sometimes appear a little odd. Please bear with them and answer each question as honestly as you can.

For each item there is a row of choices for a five-point scale. Put (X) in the box to mark your response.

The numbers stand for the following responses:

- 1 - this item is never or only rarely true of me
- 2 - this item is sometimes true of me
- 3 - this item is true of me about half the time
- 4 - this item is frequently true of me
- 5 - this item is always or almost always true of me

Example

	1	2	3	4	5
I constantly reflect on my policing practice with a view to sharing it with colleagues to improve policing outcomes.				X	

If this was almost always true of you, you would choose 5 as your answer.

If you only sometimes reflected on policing practice with a view to sharing, you would choose 2.

Choose the number that best fits your immediate reaction. Do not spend a long time on each item: your first reaction is probably the best one.

Please answer every question.

Do not worry about projecting a good image. Your answers are confidential.

Thank you for your cooperation.

There are 36 questions in this survey.

	1	2	3	4	5
I share knowledge and evidence-based practice with a view to completing the current job rather than out of an intrinsic interest in sharing knowledge or best practice.					
I find that at times sharing knowledge and evidence-based practice gives me a feeling of deep personal satisfaction.					
I will share knowledge and evidence-based practice with others if I believe that it will improve my chances of promotion.					
I only follow guidelines that are issued through my existing chain of command because I think relying on knowledge and evidence-based practice shared by other forces is a waste of time.					
While I am working I often identify situations where policing would be improved if we shared knowledge and evidence-based practices more widely both within and between police forces.					
I share knowledge and evidence-based practice with others, and make use of knowledge and evidence-based practice shared with me provided it will help me in my current police work.					
I share knowledge and evidence-based practice because this is currently a high-profile priority in policing.					
While I realize knowledge and evidence-based practice in policing is forever changing as new guidelines emerge, I feel compelled to discover and share what appears to me to be best practice at this time.					
I have a strong desire to excel in all my day-to-day police work, and share knowledge and evidence-based practice with others if it helps me achieve my goal.					
I share knowledge and evidence-based practice when instructed to do so.					
I constantly reflect on my policing practice with a view to sharing it with colleagues to improve policing outcomes.					
	1	2	3	4	5
If knowledge and evidence-based practice need to be shared, I aim to share it as effectively and efficiently as possible.					
Even when I have worked hard to use knowledge and evidence-based practice shared with me, I worry that I may not be able to use it well in practice.					
I find that sharing knowledge and evidence-based practice can at times be as exciting as a good novel or movie.					
If it came to the point, I would be prepared to sacrifice immediate popularity with my colleagues for sharing knowledge and evidence-based practice if it meant success in subsequent career.					
I generally limit sharing knowledge to what is specifically asked for as I think it is unnecessary to do anything extra.					

I try to relate knowledge shared on one area of evidence-based practice to that on another.					
After new knowledge and evidence-based practice have been shared with me, I review what I have learned to be sure that I fully understand and can apply it.					
Chiefs shouldn't expect officers and staff to spend significant amounts of time sharing knowledge and evidence-based practice that everyone knows won't be used.					
I usually become increasingly absorbed in sharing knowledge and evidence-based practice the more I do.					
One of the most important considerations in sharing knowledge and evidence-based practice is whether or not I will get recognition for it.					
I find it easiest to assimilate shared knowledge and evidence-based practice that has been carefully prepared and presented with the key points neatly summarised.					
	1	2	3	4	5
I find most shared knowledge and evidence-based practice interesting and often spend extra time trying to obtain more information about it.					
I spend time researching and reading about shared knowledge and evidence-based practice until I understand it completely.					
I almost resent having to make the effort to share knowledge and evidence-based practice, but feel that in the end results will make it all worthwhile.					
I believe strongly that sharing knowledge and evidence-based practice with colleagues both within my own force, and in other forces, is of value and act strictly in accordance with this belief.					
I see sharing knowledge and evidence-based practice as the latest hot topic, and I always like to be seen to be at the forefront of current high-profile initiatives.					
I find it best to accept the statements and ideas passed down from the Chief and question them only under special circumstances.					
I spend a lot of my free time finding out more about knowledge and evidence-based practice which has been shared by different police forces and partner organisations.					
I make a point of looking at most of the shared sources of knowledge and evidence-based practice that are suggested to me as relevant to my work.					
I share knowledge and evidence-based practice because I feel that I will be able to progress in my career if I participate in sharing initiatives.					
Knowledge and evidence-based practice shared by others has changed my views about such things as policing policy, best practice and policing priorities.					
I believe that good policing is predicated on sharing knowledge and evidence-based practice, and that policing policy should reflect this.					
	1	2	3	4	5
I am very aware that higher ranking officers know a lot more than I do so I concentrate on what they say is important to share rather than rely on my own judgement.					

I try to relate new knowledge and evidence-based practice that is share with me to what I already know from my own policing practice.					
I adapt my policing practice to take account of new knowledge and evidence-based practices shared with me.					

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